



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,880	10/15/2001	Barry Charles Holdstock	674515-2003	3435
22918	7590	11/28/2007		
PERKINS COIE LLP P.O. BOX 2168 MENLO PARK, CA 94026			EXAMINER CHEUNG, WILLIAM K	
			ART UNIT	PAPER NUMBER
			1796	
			MAIL DATE	DELIVERY MODE
			11/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/977,880	Applicant(s) HOLDSTOCK ET AL.	
	Examiner William K. Cheung	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 9-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 9-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The examiner acknowledges the receipt of the argument filed September 14, 2007. Claims 1-6, 9-30 are pending.
2. The examiner acknowledges the receipt of the argument filed September 14, the rejection of Claim 24 under 35 U.S.C. 112, second paragraph, is withdrawn. Further, the rejection of claim 28 under 35 U.S.C. 112, first paragraph, is withdrawn.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 27 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 27 (line 2), the recitation "immobilized alkali" is considered non-enabling. Although applicants' specification (page 7) disclose that "immobilized alkali" is an "immobilized hydroxide", which can be Amberjet 4400 (OH), however, there is no

indication that Amberjet 4400 comprises an alkali metal. Therefore, in view of lack of teachings for enabling "immobilized alkali", the examiner has a reasonable basis that the invention of claim 27 considered non-enabling, for one of ordinary skill in art to make/use the invention as claimed.

Applicant's arguments filed September 14, 2007 have been fully considered but they are not persuasive. Applicants argue that the recited "immobilized alkali" is considered definite because "alkali" means any substance that is basic in pH. However, according to American Heritage® Dictionary, the recited "alkali" can have the following meanings. Although the provided meanings do not exclude applicants argued meanings, however, the provided meanings by the Dictionary also include other meanings such as "alkali metal", a carbonate or hydroxide of an alkali metal, or any of the various soluble mineral salts. Therefore, in view of multiple possible meanings that can be interpreted into the claims, the examiner has a reasonable basis to maintain the rejection set forth.

1. A carbonate or hydroxide of an alkali metal, the aqueous solution of which is bitter, slippery, caustic, and characteristically basic in reactions.
2. Any of various soluble mineral salts found in natural water and arid soils.
3. Alkali metal.
4. A substance having highly basic properties.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-6, 9-26, 29, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mancini et al. (US 4,056,496) in view of Mitra et al. (US 5,212,015) as evident in Goto et al. (US 3,845,164), and Williamson et al. (US 6,239,298), for the reasons adequately set forth from paragraph 10 of the office action of June 15, 2007.

Mancini et al. (col. 3, line 32-48) disclose the deketalization of a compound that is substantially identical to the chemical of Formula II as claimed with a strong acid.

Mancini et al. (col. 3, line 50 to col. 4, line 3) in example 1 clearly indicate the use of

concentrated sulfuric acid for the deketalization process, which is also followed by a filtration process.

The difference between the invention of claims 1-6, 9-26, 29, 30 and Mancini et al. is that Mancini et al. are silent on using an immobilized acid for the disclosed deketalization process.

Mitra et al. (col. 18, Example 21) disclose a process to deketalize an organic compound. Since both Mancini et al. and Mitra et al. are both related to the same endeavor of deketalizing organic compounds, it would have been obvious to one of ordinary skill in art to appreciate and combine the deketalization teachings in Mitra et al. and Mancini et al. Further, motivated by the expectation of success of obtaining compounds that are of high purity with Amberlyst-15, which is an immobilized acid (Mitra et al., col. 18, Example 21) comprising sulfonic acid functionalities which are highly acidic by nature, it would have been obvious to one of ordinary skill in art to incorporate the immobilized acid teachings of Mitra et al. into Mancini et al. to obtain the invention of claims 1-6, 9-26, 29, 30.

Regarding the claimed side reaction products, an acrylic acid and a crosslinker, applicants must recognize that deketalized product of Mancini et al. are prompt to side reactions in the presence of a strong acid such as the concentrated sulfuric acid of Mancini et al. or the Amberlyst-15 of Mitra et al. In the presence of a strong acid, the hydrolysis of the deketalized product of Mancini et al. would readily lead to the formation of acrylic acid or methacrylic acid as claimed, which is affirmed by the reference to Goto et al. (col. 4, line 34-37). After reviewing the reference to Goto et al., it would not be

difficult to one of ordinary skill to recognize that the deketalization of Mancini et al. comprises side reaction products, such as acrylic acid or methacrylic acid as claimed.

In view of the reasons set forth above, reaction mixture as disclosed in Mancini et al. clearly disclose a reactive mixture comprising deketalized product of Mancini et al. and acrylic acid or methacrylic acid. In view of the teachings of Williamson et al. (col. 2, line 40-49), it is clearly that the esterification reaction can readily occur between an alcohol (glycerol) and a free carboxylic acid (acrylic acid) in the presence of a strong acid (sulfuric acid) (col. 3, line 9-14). Therefore, after reviewing the reference to Williamson et al. it would not be difficult to one of ordinary skill to recognize the esterification reaction product produced by the reaction of the deketalization of Mancini et al. with the side reaction products, such as acrylic acid or methacrylic acid, to obtain the crosslinker as claimed.

Regarding the claimed "0.50 percent or less of crosslinker" of claim 23, the "essentially quantitative conversion" of claim 25, the "5% or less of a polymer formed by polymerization of said crosslinker" of claim 26, in view of the substantially identical type of reaction as disclosed in the prior art and the reaction type as claimed, the examiner has a reasonable basis that the claimed amount of side reaction product or the "essentially quantitative conversion" are inherently possessed in Mancini et al. and Mitra et al.

Applicant's arguments filed September 14, 2007 have been fully considered but they are not persuasive. Applicants argue that Mitra et al., Goto et al., and Williamson et al. are non-analogous art that can not be used to make up the deficiency on the

teachings of Mancini et al. However, the examiner disagrees because the prior art Mitra et al. shares the common endeavors of using dektalized organic compounds with Mancini et al. Regarding Goto et al., and Williamson et al., they are merely references used as evidence for affirming the chemistry rationale set forth for the rejection with Mancini et al. and Mitra et al. When a reference is used for affirmation purposes, there is no need for a motivational statement.

Regarding applicants' argument that Mancini et al. and Mitra et al. do not teach the side product of the claimed process, applicants must recognize that Mancini et al. (col. 3, line 44) clearly disclose the hydrolysis of dioxolanoalkyl acrylate or methacrylate, which is substantially identical to the chemical structure (II) of claim 1. Therefore, in view of the substantially identical hydrolysis reaction catalyzed by an acid and for the same rationale set forth by applicants relating to the claimed side reaction product of claim 24, the examiner has a reasonable basis that the argued side product of claim 24 is inherently possessed by Mancini et al.

Regarding applicants argument that the working examples of Mancini et al. do not teach the side products being claimed, Applicants fail to recognize that the examiner is not restricted to use the working examples of Mancini et al. for a rejection.

Regarding the argued advantages of the claimed invention, applicants fail to provide any comparative data to show the argued advantage.

In view of the reasons set forth above, the instant rejection is proper.

Conclusion

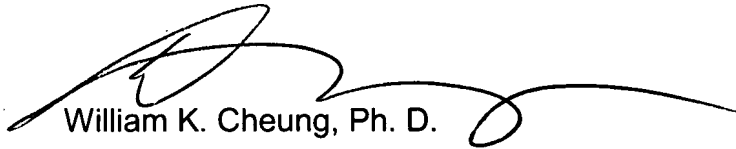
7. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William K. Cheung whose telephone number is (571) 272-1097. The examiner can normally be reached on Monday-Friday 9:00AM to 2:00PM; 4:00PM to 8:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David WU can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



William K. Cheung, Ph. D.

Primary Examiner

November 23, 2007

WILLIAM K. CHEUNG
PRIMARY EXAMINER